AMENDMENTS TO THE CLAIMS

The following is a marked-up version of the claims with the language that is underlined ("___") being added and the language that contains strikethrough ("—") being deleted:

1. (Canceled)

2. (Currently amended) An x-ray imaging system comprising:

a substrate comprising material ~~suitable for~~ compatible with a semiconductor manufacturing process; and

a gas detector formed on the substrate, the gas detector comprising a first detection circuit corresponding to a first chamber and a second detection circuit corresponding to a second chamber, said first detection circuit providing a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber, said second detection circuit providing a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the first portion of x-rays being different than the second portion of x-rays, and wherein an x-ray stopping component is arranged between said first and second chambers, the x-ray stopping component operative to absorb off-axis photons.

3 - 4. (Canceled)

5. (Previously presented) An x-ray imaging system comprising:

a gas detector comprising a first detection circuit corresponding to a first chamber and a second detection circuit corresponding to a second chamber, said first detection circuit providing a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber, said second detection circuit providing a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the first portion of x-rays being different than the second portion of x-rays, and wherein an x-ray stopping component is arranged between said first and second chambers, the x-ray stopping component operative to absorb off-axis photons;

a first gas reservoir selectively, pneumatically communicating with said first chamber; and

a second gas reservoir selectively, pneumatically communicating with said first chamber such that gas from either said first gas reservoir or said second gas reservoir can be selectively provided to said first chamber.

6 - 12. (Canceled)

13. (Previously Presented) The x-ray imaging system of claim 2, further comprising:
means for changing a pressure of the volume of gas.

14. (Previously Presented) The x-ray imaging system of claim 2, further comprising:
means for changing the gas from one type of gas to another type of gas.

15. (Previously presented) A method for imaging with the use of x-rays, said method comprising:

providing a substrate;

using a semiconductor fabrication technique to form on the substrate, a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber;

generating a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber, the first signal corresponding to at least a first pixel; and

generating a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the second signal corresponding to at least a second pixel, wherein the first portion of x-rays is different than the second portion of x-rays.

16. (Original) The method of claim 15, further comprising:
rendering the first pixel based on the first signal; and
rendering the second pixel based on the second signal.

17. (Canceled)

18. (Previously Presented) The method of claim 15, further comprising:
changing a pressure of a volume of gas within the first chamber.

19. (Previously Presented) The method of claim 15, further comprising:

providing an object to be imaged, the object being arranged at least partially between a source of x-rays and at least one of the first and second chambers;

generating additional signals indicative of the intensity of x-rays radiating into the first and second chambers; and

generating sequential images corresponding to the object based on the additional signals.

20. (Previously Presented) The method of claim 19, further comprising:

moving the object relative to at least one of the first and second chambers while the object is being radiated.

21 - 34. (Canceled)

35. (Previously presented) A pixelated gas detector comprising:

a first chamber;

a first detection circuit providing a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber;

a second chamber;

a second detection circuit providing a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber;

an x-ray stopping component arranged between the first and second chambers, the x-ray stopping component operative to absorb off-axis photons; and

a first and a second gas reservoir pneumatically communicating with the first chamber such that gas from either the first or the second gas reservoir can be selectively provided to the first chamber.

36. (Previously presented) The pixelated gas detector of claim 35, further comprising:

a pressure regulator for setting a first pressure of gas in the first chamber.

37. (Previously presented) The pixelated gas detector of claim 35, wherein the x-ray stopping component comprises lead.